



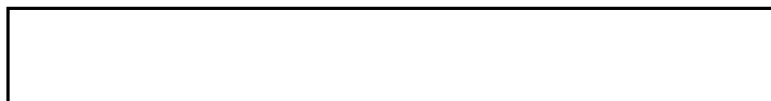
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IMAGERY
ANALYSIS
DIVISION

PIR

PHOTOGRAPHIC INTELLIGENCE REPORT

TAI-YUAN BALLISTICS AND SOLID
PROPELLANTS TEST FACILITY, CHINA



CIA/PIR 61035

DATE Sep 1965
COPY 34
PAGES 14

GROUP 1
Excluded from automatic
downgrading and declassification

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Declass Review by
NIMA/DOD

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TITLE

SEC. CLASS. LOCATION

IR 61035 SEPT. 1965

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CIA

TAI-YUAN BALLISTICS AND SOLID PROPELLANTS TEST FACILITY, CHINA

INTRODUCTION

The Tai-Yuan Ballistics and Solid Propellants Test Facility is located 8 nautical miles north of Tai-Yuan, China at 37-59N and 112-33E (Figure 1). The 145 acre facility is secured by a single board fence and is served by a road from the northeast corner of the Tai-Yuan Explosive Plant. It is divided into two areas each having its own entrance gate and security guard house. The eastern half is a ballistics test area including a small 150-foot range and two 700-foot [redacted] and ten support buildings. The western half is a solid propellants test area including a single position horizontal test stand, a two-position horizontal test stand, an assembly/checkout building, and 15 support buildings (Figures 2 and 3).

This test facility has been covered by 15 photographic missions between [redacted]. The first mission in [redacted] indicated that the facility was being constructed for ballistics test purposes only (Figure 2). Subsequent changes in plans necessitated relocation of the western security fence and construction of a new southern access road to accommodate the addition of a solid propellants test area. The 700-foot ballistics range, although essentially complete by [redacted], was probably not operational until sometime in 1964 when the roads in the support area were surfaced. In the propellants test area the major buildings were complete by [redacted]. However, the test stands were probably not operational until late in 1964 when the road and rail networks were completed.

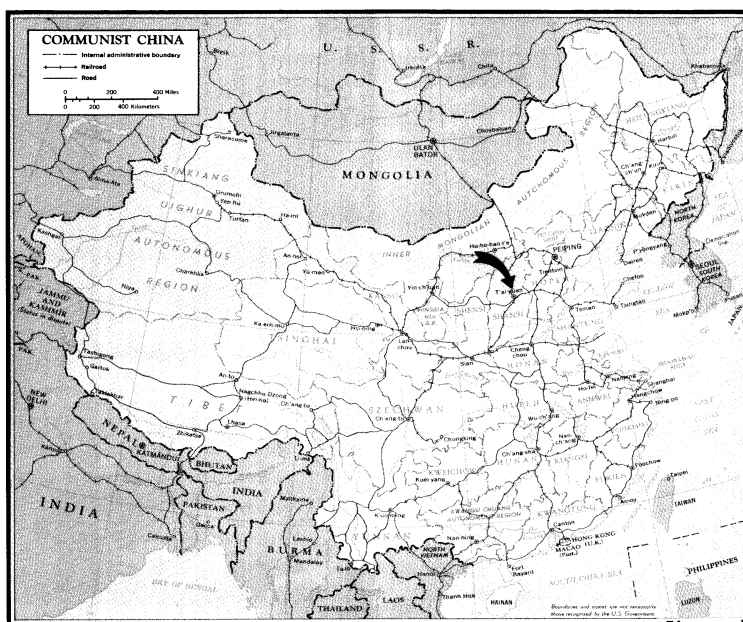


Figure 1

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1959

The ballistics test area was under construction in [] (Figure 4). At that time the security fence was in place with a guard house (No. 1)* at the entrance gate. Eleven buildings (Nos. 1-11) were complete and the road network was beginning to emerge. The 150-foot ballistics test range (Figure 5) appeared nearly complete at that time. It consisted of grid lines at [] intervals, at least one firing pad, and a triangular impact revetment down range to the north. The range was served by only an unimproved trail or track from the area of the range support buildings (Nos. 1-8). The 700-foot ballistics ranges (Figure 6) consist of two firing pads, control buildings (Nos. 9 and 10), "I" shaped protection revetments, fragment protection walls, observation bunker (No. 11), projectile [] (Nos. 12 and 13), and a central access road. In [] these ranges were in mid stage of construction with most of the revetting, bunkering, and road network still to be completed.

1960

The next photographic coverage was []. Although of poor quality, it revealed new construction for the solid propellant test facility, west of the ballistics ranges. Three new buildings (Nos. 14-16), including the assembly/checkout building (Figure 3, No. 15, Figures 9 and 11), were barely discernible. Their construction status could not be determined.

1961

In [] more buildings (Nos. 17-23) were identified. Both test stands in the solid propellants test area were evident with the two position stand (Figure 3, No. 17, Figures 9 and 11) appearing structurally complete and the larger single position stand (Figure 3, No. 20, Figures 7 and 8) still under construction. By [] three more buildings (Nos. 24-26) had been constructed.

1962

Good quality photography in [] revealed four additional buildings (Nos. 27-30) as well as other important features. The roof structure of the single position stand was not yet in its final configuration and numerous drainage ditches and track activity indicated that construction was continuing. Although the assembly/checkout building appeared structurally complete, only three of the four lightning arresters were in place. Also evident was the removal of Building No. 8 and early indications of a new access road under construction on the south side of the facility. The fence on the western side of the ballistics test area had been moved approximately 300 feet to the east from its original position as seen in []. A large gap in the fence permitted free movement from one area to the

* Annotation members identify buildings and facilities on Figures 2 thru 10 and in the table of dimensions.

other. The old guard house and support building (Nos. 1 and 2) are now part of the propellants test area. These facts suggest that the original plans called for a ballistics test facility and that it was not until construction of this facility was well along that decision was made to add a propellant test area. It appears that the major emphasis was placed on the new area since by [] over three years after the start of construction, the revetting of the test positions at the 700-foot ballistics ranges was still not complete and the roads in this area were still unfinished. An unidentified object was at the center point of the grid at the 150-foot range on photography of []. Its position at that point rather than the probable firing pad is unexplained at this time, but further evidence in [] provides a possible answer.

1963

[] missions of fair quality between [] revealed the construction of an additional building (No. 31), the completion of the "I" shaped revetments at the 700-foot ranges and the start of excavation for another building (No. 36).

Good quality coverage in [] revealed that the new southern access road nearing completion and a guard house (No. 34) at the new entrance to the ballistics test area had been constructed. For the first time a circular scar about 30 feet in diameter is seen at the center of the grid at the 150-foot range. A number of hypotheses may be advanced to explain this marking: The function of the range may have been changed from ballistics test to a propellant burn area; the mark is evidence of a bursting charge test; the center point is a normal firing position and the scar represents a malfunction during a ballistics test. The latter theory is probably the least likely since the same mark appears again in []. Whatever the explanation may be, it is clear that the center position was in use as early as [] as previously noted.

This coverage in [] also shows the final completion of the security fence between the two test areas with access limited to a gate on the central service road. Within the propellants test area the general road pattern is emerging although access roads and parking aprons at many of the buildings have not been constructed. The internal rail network is visible with lines interconnecting the test stands, support, and assembly/checkout buildings. This rail pattern suggests that the two position stand is supported by section "A" of the assembly/checkout building and Building No. 14. The single position stand is apparently supported by sections "C" and "D" and Building No. 14 as well as Building No. 18. Numerous drainage ditches are in evidence on this mission and excavation continues for Building No. 36. Three more lightning arresters can be identified around the two position test stand and the assembly/checkout building. A pipeline extends from a point 100 feet east of Building No. 18 to the assembly/checkout building. The line appears broken at rail and road intersections and may be incomplete. The explosives storage building (19) previously identified in [] is nearing completion but its revetment is still under construction. The roof structure of the single position stand is in its final configuration, and it can be considered structurally complete. A paved apron around the stand extends 60 feet in front of the firing end and has a dark central strip approximately [] by 110 feet long emanating from the center of the firing bay. This dark strip is clearly defined and quite regular and should not be construed as a blast mark. The two position stand is well defined for the first time on this mission. The

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access roads, rail lines, control and observation buildings, and lightning arresters can be clearly seen.

1964

The next coverage of the facility was over a year later on [redacted]. This mission revealed that the ballistics test area had been completed with the addition of a new access road from the central service road to the observation bunker (No. 11). Construction of all roads and building aprons was complete. In the propellants test area, surfacing of all roads was complete. The explosives storage support building (No. 19) and the revetment were also complete. A new building (No. 35) had been constructed west of support Building No. 16 and the foundation has been laid for Building No. 36. Less than a month later Building No. 37 is visible on [redacted] and the first structural members of Building No. 36 are evident.

1965

[redacted] provides the best coverage through [redacted]. It is apparent from this photography that the propellants test area is very near completion. No new construction can be identified and only Building No. 36 remains unfinished.

All rail lines are complete and many drainage ditches have been covered or filled in. The pipe line still appears to have breaks at road and rail intersections. However, these sections may be underground. Landscaping is evident in both the propellants and the ballistic test areas. Although no direct evidence of operational activity can be identified on this mission, the overall "finishes" appearance of the facility indicates that it is probably operational at this time and may have been since late in 1964.

REFERENCES

DOCUMENTS

NPIC R-868/64, Probable Solid Propellants Test Facility, Tai-Yuan, China
October 1964 (TOP SECRET [redacted])
NPIC [redacted], Probable Solid Propellants Test Facility, Tai-Yuan,
China, January 1965 (TOP SECRET [redacted])
NPIC R-1323-64, Probable Solid Propellant Production/Test Facility, Tai-
Yuan, China, August 1964 (SECRET/[redacted])

MAPS and CHARTS

USATC, Series 200, Sheet 0382-13AL, 2nd edition, October 1960 (SECRET)

REQUIREMENT

C-RR4-81,868

CIA/IAD PROJECT

30848-4

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TABLE OF DIMENSIONS

| Annotation Number | Figure Number |
|----------------------|------------------|
| 1 | |
| 2 | |
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| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 a | 9 and 11 |
| 15 b | 9 and 11 |
| 15 c | 9 and 11 |
| 15 d | 9 and 11 |
| 16 | |
| 17 a | 9 and 10 |
| 17 b | 9 and 10 |
| 17 c | 9 and 10 |
| 17 d | 9 and 10 |
| 17 e | 9 and 10 |
| 17 f | 9 and 10 |
| 18 | |
| 19 | |
| 20 a | 7 and 8 |
| 20 b | 7 and 8 |
| 20 c | 7 and 8 |
| 20 d | 7 and 8 |
| 20 e | 7 and 8 |
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| 37 | |
| 37 | |
| TOTALS | |

| Function |
|--|
| Original guard house |
| Function undetermined |
| Function undetermined |
| Function undetermined |
| Function undetermined |
| Explosive storage |
| Explosive storage |
| Removed |
| Control building |
| Control building |
| Instrumentation bunker |
| Assembly/checkout building (large stand support) |
| Assembly/checkout building (small stand support) |
| Assembly/checkout building (small and large stand support) |
| Assembly/checkout building (large stand support) |
| Assembly/checkout building (large stand support) |
| Function undetermined |
| Test stand (firing bay) |
| Test stand (firing bay) |
| Test stand |
| Test stand |
| Test stand |
| Test stand |
| Assembly/checkout building (large stand support) |
| Motor storage |
| Storage support |
| Test stand |
| Test stand |
| Test stand |
| Test stand |
| Test stand (firing bay) |
| Function undetermined |
| Function undetermined |
| Function undetermined |
| Guard house |
| Guard house |
| Function undetermined |
| Test observation |
| Test observation |
| Function undetermined |
| Function undetermined |
| Administration |
| Function undetermined |
| Removed |
| Guard house |
| Removed |
| Function undetermined |
| Function undetermined |
| Function undetermined |

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Figure 2

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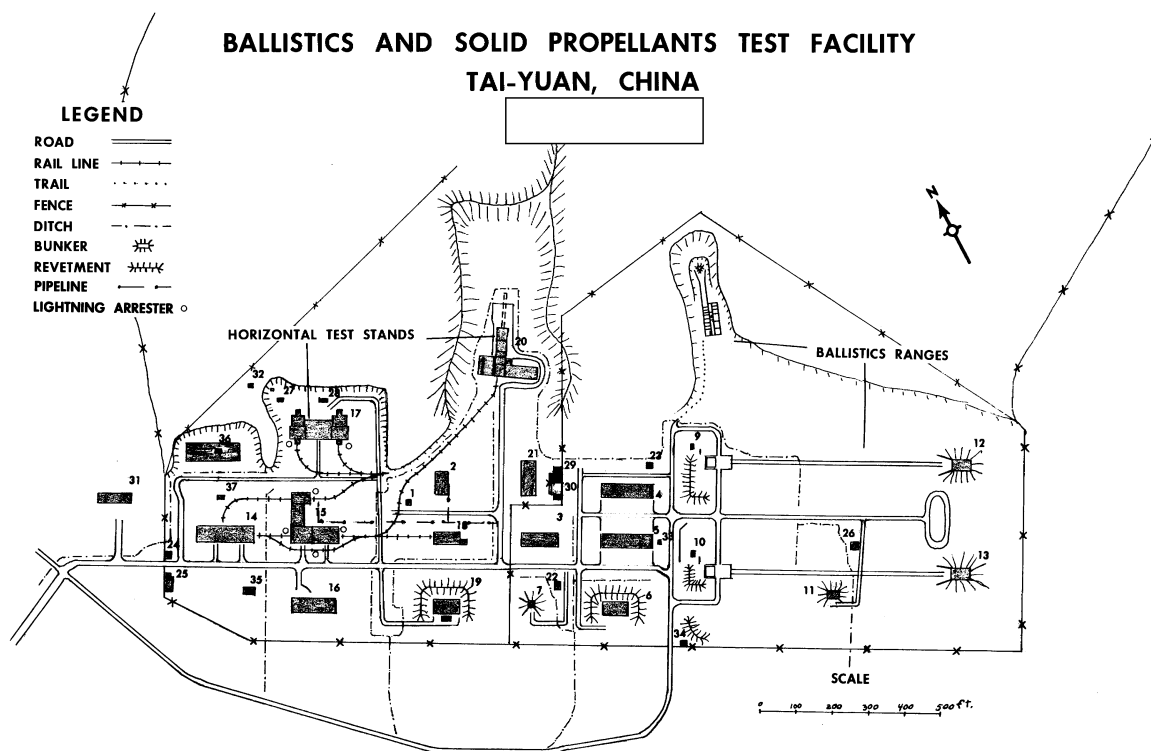


Figure 3

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**BALLISTICS TEST FACILITY
TAI-YUAN, CHINA**

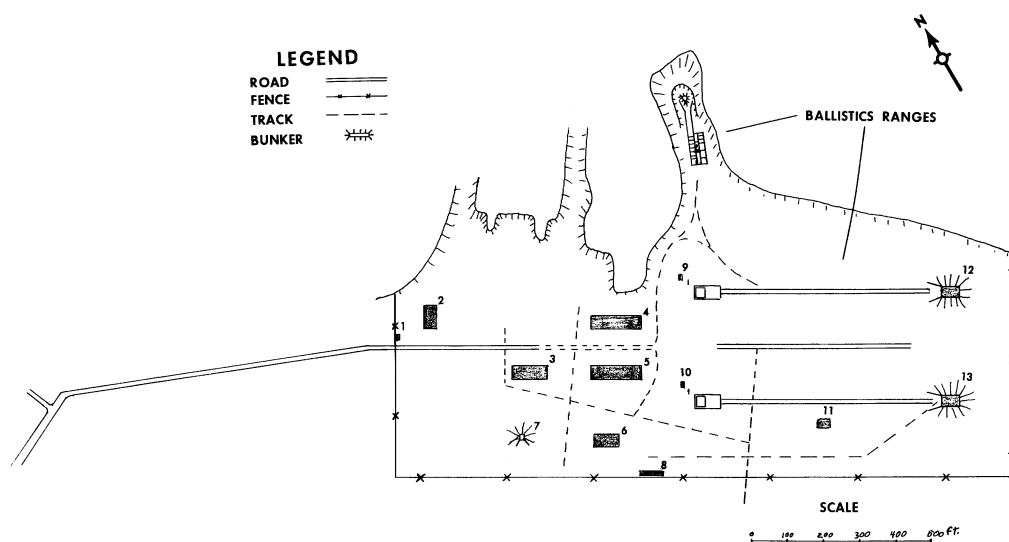
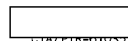


Figure 4

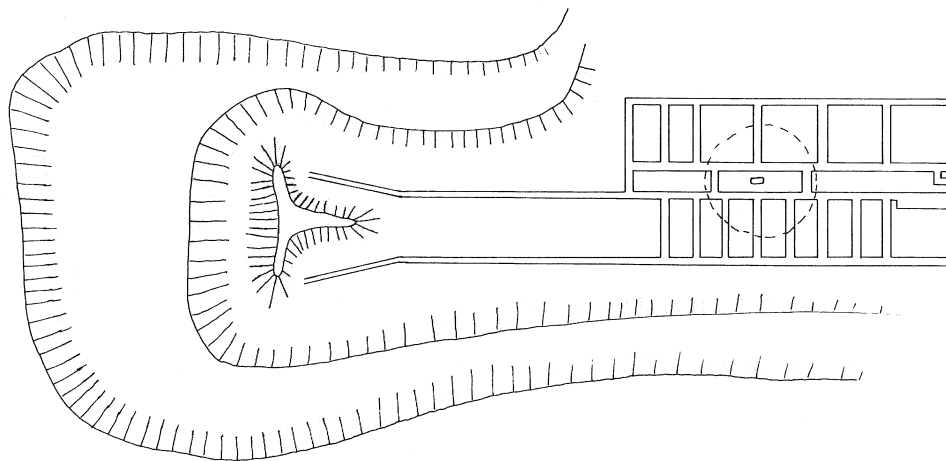
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150 FT BALLISTICS RANGE



SCALE



Figure 5

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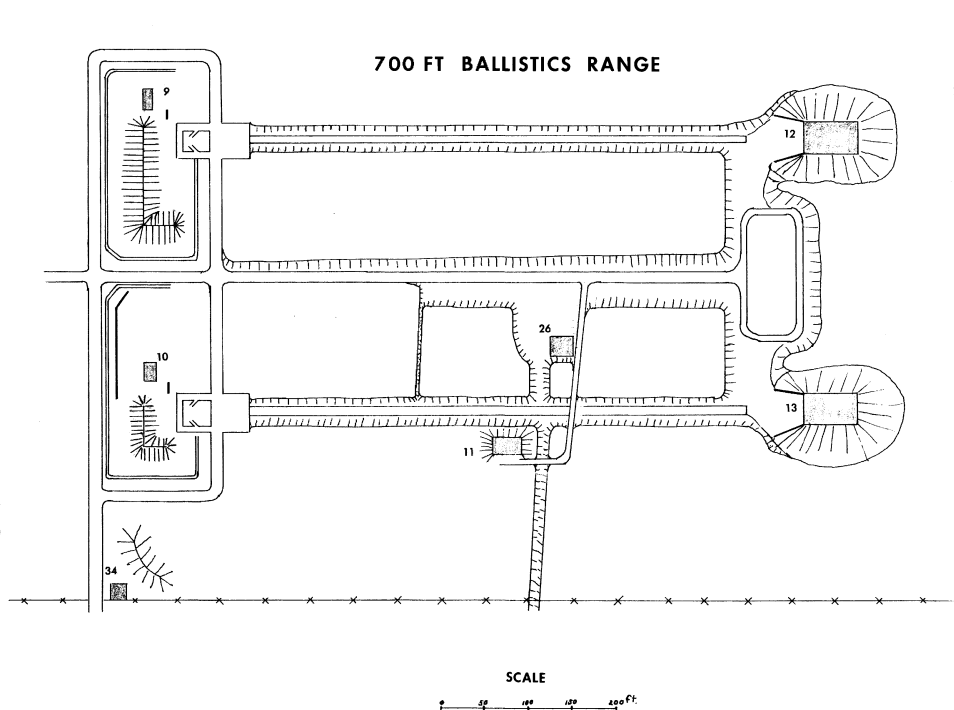


Figure 6

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HORIZONTAL TEST STAND (ONE POSITION)

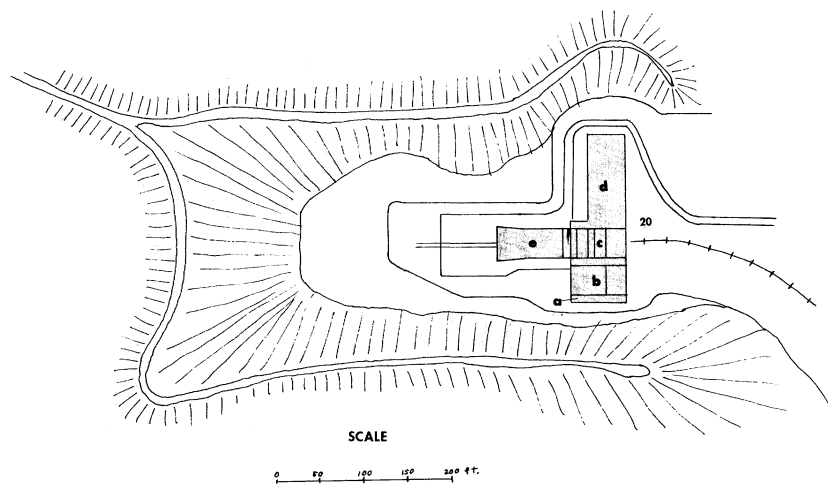
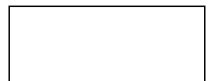


Figure 7

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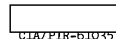
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HORIZONTAL PROPELLANTS TEST STAND (ONE POSITION)

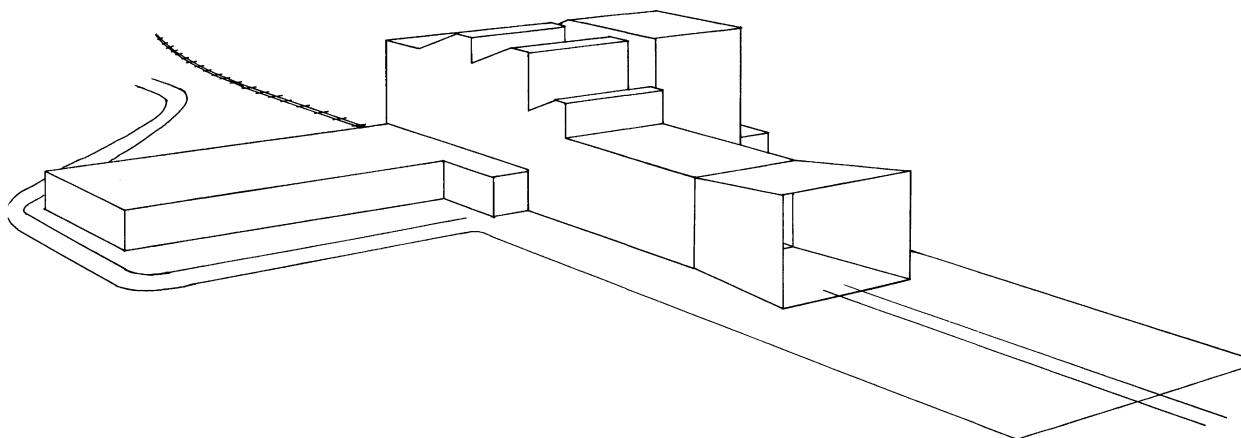
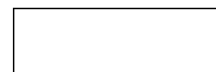


Figure 8

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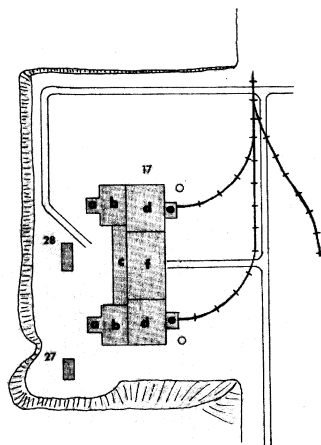
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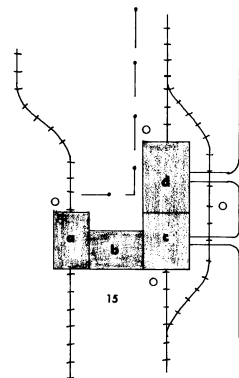
HORIZONTAL TEST STAND (TWO POSITIONS)

ASSEMBLY/CHECKOUT BUILDING



SCALE

0 50 100 150 200 FT.



SCALE

0 20 40 60 80 FT.

Figure 9

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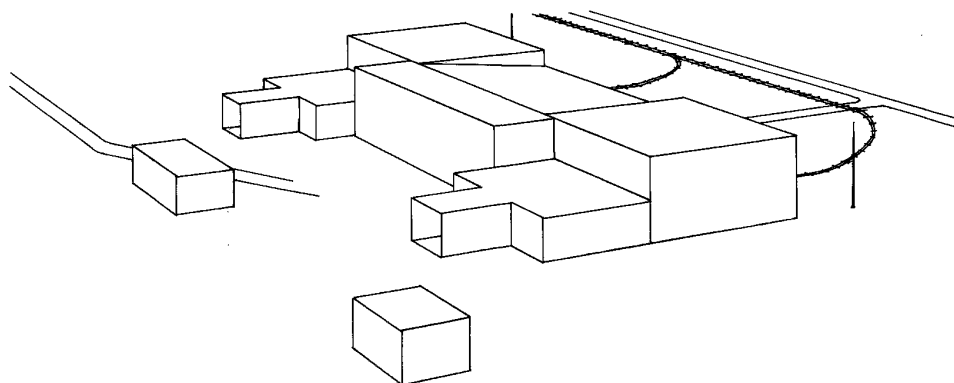
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**HORIZONTAL PROPELLANTS TEST STAND
(TWO POSITIONS)**

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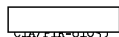
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ASSEMBLY/CHECKOUT BUILDING

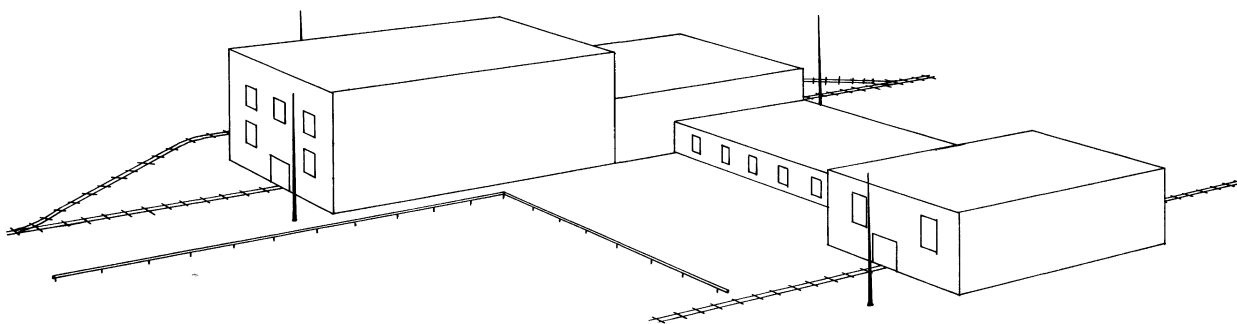


Figure II

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